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## CONTRIBUTED ARTICLES

### Growing Crimson Clover as a Honey-Plant.

BY F. GREINER, ONTARIO CO., N. Y.

BEFORE long it will be time to sow crimson clover again, and I would like to say a few words in regard to this clover as a honey-plant, with that end in view of interesting the bee-keeping fraternity in it so as to induce them to grow it more extensively not only to furnish pasture for their bees, but also to enrich their land.

My experience is as follows: A year ago (in July) I sowed my plum orchard of two acres or more to crimson clover, sowing about 15 quarts per acre—perhaps 12 quarts might have answered. It came up nicely, and tho we had an unprecedented drouth, it made fine growth and soon covered the ground. It was a gratifying sight even during the winter, for it retained that beautiful green color we so admire in our meadows and pastures when the grass first starts in the spring. In the most bleak places the clover winter-killed, but outside of that it started nicely in the spring.

It commenced blooming the last of May, and continued to June 10, during which time it was freely visited by the bees.

It may be observed that this span of time—from the last of May to June 10—is just exactly that dull time occurring every year between the fading of the apple-bloom and the beginning of the raspberry and white clover honey-season. The crimson clover is therefore all the more valuable as a honey-plant.

I notice it had a most beneficial effect on the land, plowing up quite mellow where formerly it had been quite hard. Some grape-growers in this and adjoining vicinities sow crimson clover in their vineyards, let the seed get about ripe, then plow the crop under. They tell me it will thus seed itself.



I am not able to give exact data as to the amount of honey crimson clover yields, but judging from the number of bees engaged all day long gathering the honey, I should say it would excel the white clover and buckwheat for the time it lasts, and might be considered a close rival of the basswood. In fact, I have but few times seen as many bees at work at a time as I had occasion to observe in my clover field. At times I counted 20 bees to the square foot, of which three out of every four were gathering honey.

Supposing the bees would evenly distribute at that rate over an acre of crimson clover while in bloom, 861,200 bees would find room and employment on the same at one time. If I now assume that every colony of bees has 20,000 workers to spare for outdoor labor at this time of the year, that

would perhaps be an estimate fully high enough. By dividing the former number by the latter we find that it would require 43 colonies to furnish the workers necessary for one acre of crimson clover; 100 colonies would need about 2½ acres at the same ratio. It would perhaps be unreasonable to assume that 100 colonies of bees could be fully employed on 2½ acres of ground; but it would seem as tho 25 acres might be sufficient, providing there is an even stand of clover all over the field.

Now, perhaps my figures are not very reliable, and prove nothing, still the fact cannot be dodged that I found from 10 to 20 honey-bees per square foot busy in my clover, not counting the bumble-bees and other insects. Therefore it seems to me by providing a few acres of crimson clover, blooming as it does at a time when other bloom is scarce, we could greatly benefit our bees. It would, of course, be necessary to allow the clover to form seed and not plow it under too soon.

The seed of this clover finds a ready sale at a fair price, and it would seem that even the farmers who are not bee-keepers might be induced to grow it just for the seed, if nothing more. Bee-keepers might even pay a premium to farmers in their vicinities. I believe I could afford to pay 75 cents or \$1.00 for every acre sown within one mile of my apiaries.

In consideration of the fact that the majority of bee-keepers are also engaged in farming, some of them quite extensively so, would it not be a wise thing for them to devote a portion of their farms to crimson clover?

## Managing Out-Apiaries for Extracted Honey.

BY N. E. FRANCE.

EACH bee-keeper should study the various ways of others, and then apply such methods as will best suit his location and circumstances. With us, bees wintered in the cellar would often be weaker in numbers the last of April and May than when taken out of the cellar, while those wintered in large chaff hives on the summer stands would be strong and by far the more profitable. So that, for the last 20 years, our bees have been mostly in these chaff hives, which are simply four standard Langstroth hives inside, combined into one hive or house, with a 2-inch space on the outside for chaff filling. Each colony is separate from the others, one entrance on a side, but in winter weather the bees cluster near the center of the hive, and thus help to keep each other warm. See the picture herewith of an empty hive, showing brood-frames in hive-body, button over upper entrance turned to one side as in summer; second story by the side of the hive; top and side next to the stack showing chaff wall with a strip of tin on two upper stories of the hive to prevent any chance for bees to pass from one colony to another. When two sets of extracting-combs are to be used, the cover is raised in place by use of the board band, which is hooked together and set on the hive proper. One-half of this band is laid on the grass, with the queen-excluding zinc leaning against the hive by it. The hinged cover is turned back one way while working two colonies, and reversed when working the others—so that there is no need of lifting any covers. A plain band made of common fencing forms the stand for the hive, and is leveled before the hive is put on it.

If the bees have plenty of good honey and a young fertile queen early in the fall, we seldom have any loss. On an average, not over three to five percent. I do not recommend this hive, nor advise those having single hives, and who can winter bees successfully in the cellar, to change to our method or kind of hive. The bees consume a little more food in chaff hives than in a cellar, so, if you can, keep the cellar dry, well ventilated, of uniform temperature, about 45 degrees with strong colonies and good feed, and don't be in too great a hurry to get the bees out in the spring.

In warm weather in the spring I examine each colony, and see if they need any feed or help; and, if so, give them next to the brood a comb of honey that I may find in some queenless colony that has lost its queen during the winter; or, perhaps, exchange an empty comb for a comb of honey from some colony that can spare it. When dandelion bloom appears, I again examine each colony, clipping the queen's wings, putting the brood from the second story down below, and putting empty combs above. If a colony has a good queen, but the colony itself is not as good as desired, I take from the strongest colonies one or two brood-combs covered with bees, and give them to the weaker.

When there is nothing for the bees to gather in the spring, we use a hive-tent; for by its use we can work in the apiary all day and not have any colony of bees disturbed by robber-bees. Our tent is made of a light frame, and covered with cheese-cloth, with an outlet at the top to let out bees that may alight on the inside while we are at work. If I were to make a tent in which to work single-colony hives, I would use three light frames covered with wire-cloth and hinged together, so it could be folded and easily stored away when not in use.

From the best colony in the apiary I select choice worker-combs full of eggs to rear my queens for that apiary; buying new queens, one or two each year, to introduce new blood. As my bees are mostly in out-apiaries, from three to five miles from home, and no one there to look after them when we are away, I do not allow natural swarming, but divide as occasion requires.

When white clover begins to yield honey we extract all the store-combs to get out this amber grade from fruit-bloom and dandelions, as its color and flavor should not be mixed with the better grades. Great care is taken to keep each grade separate, and to see that each package is marked, showing the weights and the source from which the honey is gathered. No honey is allowed to be extracted until fully ripened; and, generally, all capt over. If unripened honey is put on the market it will soon spoil and ruin the market. Good, ripened honey, if kept in a dry room, will keep for years. I have some good honey in common glass jars that I extracted 22 years ago, and it promises to remain good so long as not sampled too often.

Towards the close of the honey-flow we make sure to save enough good combs of honey to feed the bees until dandelion bloom next season. I am often asked, "How much

honey is necessary to winter a colony of bees?" My reply is, "A little too much feed in the fall will be just enough next spring." Wisconsin bee-keepers lost 70 percent of their bees last winter, not all for want of honey, but in many places in the State, in May, I found dead or weak colonies without honey.

When our honey season is over the extra combs, after being cleaned up by the bees, are stored in racks in the bee-house, the hive-entrance nearly closed up by the large button, and the little space over the bees, under the roof, filled with dry oats chaff or straw. This is all the work we do to fit our bees for winter.

Allow me to describe some of the methods of handling the six or seven hired, inexperienced boys from 15 to 20 years of age. I board them for the days they help me, about four weeks, and pay from \$12 to \$20 per month. Each one, by number, has duties assigned, and will take special interest in his work, and soon become an expert in his department. Each is furnished a good straw hat and bee-veil to take care of and return at the close of the season.

As we near an out-apiary, each man gets his trousers adjusted bee-tight at the ankles, and veil on his hat ready for business. Each apiary is located on a gentle slope to the south, with a heavy timber wind-break on the north and west, and a private road from the upper side of the apiary, thru the yard by the side of the extracting-house that is in the center of the yard. This road leads on down the slope below the apiary, so that the wagons, when loaded, can be run by hand easily to a safe distance in the grove to hitch on the teams. There is a freight wagon for barrels, uncapping-box, etc., and a canopy-top four-seated rig much like a stage. Having but one team, I hire a team for a few days to haul one of my wagons. We generally arrive at an out-apiary about 8:30 a. m., three to five miles from home. Each man is ready for duty, and they soon change the scene in the apiary. All are a jolly set; and if one should get a sting he is quiet about it, for fear the other boys may laugh at him. I will call them by number to be better understood.

Nos. 1 and 2 each have a team to care for and drive; so on arrival near the apiary they unhitch and put the teams in the farm-barn near by; then bring to the apiary the extractor that was stored in some dry farm-building.

No. 3 being the smallest boy, brings two pails of spring water, one for drinking and the other for wash-water. No. 4 leads the wagons into the apiary by the side of the bee-house; then puts the barrels, etc., in place in the house. No. 5 lights the smokers, gets fuel in the open box near the house, and each set of tools in place ready. No. 6 puts the cloth roof and siding on the house, and with a couple of nails fastens the board in place with the screen-door attached with spring hinges. This bee-house has simply four corner posts seven feet above the ground. The sides of the house are each ten feet, with a foot-wide board around the top and bottom. Cheese-cloth two yards wide and 40 feet long forms the entire siding, and a heavy ducking cloth, 10x12, forms the gable roof, which gives plenty of shade in hot days, and sheds water if caught in a shower. Small strips of leather are sewed to the edges of these cloths thru which to drive the wire nails to hold them in place.

All this takes only from five to eight minutes after arrival; then No. 5, with a sharp Bingham knife, will uncup the honey-combs, while No. 6 attends to the extracting, straining, and filling of the barrels holding 360 pounds each. I usually take the place as No. 6, as I can better take that place, and at the same time have a chance to see each hand and give orders. No. 1, with No. 2 as assistant, and No. 3, with No. 4 as assistant, open hives, take out honey-combs, brush off what bees do not run off by two or three strokes of a very thin and wide brush-broom, that is made specially for the purpose, at a broom factory, of select, fine stock. Nos. 2 and 4 bring these honey-combs, a set at a time, to the house, and return with a set of extracted ones to fill up and close the hive. The first hive in the morning has to be closed up without upper combs, so as to have combs ready for use in others, and the last set is returned to the first worked colony. To save time and keep out of each other's way, the honey-combs are set just inside of the door of the extracting-house, to the left side of the door, so that No. 5 can get the combs, uncup them over a box made for the purpose, and set them close by the side of the extractor without taking time for one or two steps. No. 6 puts the honey-combs in the extractor, which is a Cowan 4-frame reversible, with ball bearings and lever brake—in short, the best extractor on the market.

The empty combs are set by the right side of the door, and without taking more than one step. The field-boys,





*The France Quadruple Chaff-Hive.*

Nos. 2 and 4, get rid of their honey-combs, and empty ones for exchange, by simply going to the shop-door. The little time saved in these few steps may seem of little importance, but it saves me daily the cost of one more man.

Every one as busy and happy as the little pets we are working with, time passes so swiftly that it seems but an hour after our arrival when the alarm is sounded from the house—dinner.

We all quit work as soon as possible and not leave hives open. These boys are active and hearty eaters, but even this laborious task is done in order. Nos. 1 and 2 feed the team; No. 3 gets a pail of fresh spring-water; No. 4 takes the baskets of dinner to a shady spot near by; No. 5 spreads the cloth and sets the table—picnic style. No. 6 cuts the loaves of bread and carves the meat. Dinner over, each has a duty in packing up and getting to work. The same is true at the close of the day's work, which comes when the entire apiary of 100 to 150 colonies have been treated.

The light-covered wagon with the boys in arrives at home in time for them to do the few chores common around a farm-house; so they are ready, as the freight-wagon backs up to the warehouse, to roll the barrels in the house, the floor being on a level with the wagon-bed, carefully weigh each barrel, and mark its gross and net weight on the label.

The honey is stored in these barrels until sold, without any other care—except a few dozen cases of 60-pound square cans for farmer trade. If barrels are made of a good quality of staves, kiln-dried and iron-hooped, the barrels then stored a short time in a dry, airy room, and the hoops driven the day the barrel is filled, they will never leak. That is our experience for the past 20 years; sending barrels thousands of miles, and to nearly every State east of the Rockies. We must use such packages for extracted honey as our markets demand. The next best package is the 60-pound tin can, cased; and where good cooperage can not be had, and at cheap figures, the box tin can package is perhaps as good as any. Our home market consumes about 10,000 to 12,000 pounds of extracted honey, and 500 pounds of comb honey per year.

The extracted honey is sold in common tin pails, holding three, five and ten pounds each. We furnish every grocery-store with the honey in these pails; and, to catch some customers that do not want to buy the pails, they are allowed to pay for pail and honey, and when the pail is empty and clean, they can return it to the store and get pay for it, the same as it cost.

Almost all kinds of gummed labels will not stick to new tin cans or pails, but they will stick for all time and not wash off if put on with a paste made of demar varnish reduced with alcohol.—Bee-Keepers' Review. Grant Co., Wis.



### What to Do With Unfinisht Sections.

BY S. A. DEACON.

IT has often been remarkt in print that "bee-keeping is a business of details." It is all that; and the many little operations to be performed in the economic production of honey, and in fitting it for sale, are considerably eased and expedited by the numerous little dodges and devices which we owe to the skill and inventive genius of members of our fraternity; nor can we have too many of these aids.

The late Mr. Allen Pringle, in his entertaining essay on "Bee-Keepers' Mistakes," said a good deal to discourage us from giving rein to our inventive faculties, asserting that, as a rule, we shall find that we have only been wasting valuable time going over old ground—"digging up that which has been dug up before." But with all due respect to the memory of the author of this doubtfully sage advice, I rather think we should go on delving, and tho we may not strike a bonanza, there is no reason why we should not turn up a valuable little nugget or two that have not hitherto seen the light of day. So much for the preamble; now to the point.

Few questions have been more frequently askt and answered in the columns of this journal than that heading these remarks, viz.: "What shall we do with unfinisht sections?" and somewhat varied have been the replies. Emerson T. Abbott says, "Throw 'em in the sty"—to the little piggy. But I think very few of us can afford to "cast our pearls before swine;" I, for one, can not, and have to exert my ingenuity to fit them for use again. To that end I have just been looking over, and "fettling up," some 2,000 such sections, in readiness for another expected flow. They were a disheartening sight, a hopeless looking lot, nearly all the bottom starters nibbled away, combs all sorts of odd shapes and patterns, like the bits of a child's puzzle-map, and in many cases the sections so stained and dirty that I was more than once inclined to the opinion that Mr. Abbott's advice was about right after all. But "Needs must," says the proverb, "when a certain old gentleman drives," and the necessity for exercising strict economy in our very precarious pursuit, urged me to try what I could do to fit them for another campaign.

In the majority of cases I found it best to boldly whip out the whole comb—after having first leveled them down with a Taylor comb-leveler. Then, with a little tact and economic carving, with here and there a little artistic patching and joining, I got them into shape. The eye soon learns to see where the knife must go, and with a little practice it all goes very quickly. Of course, it takes time and patience; and tho I have no doubt but that many, like Mr. Abbott, will ridicule the idea as entailing a waste of time, there are, on the other hand, many who will find it anything but a tedious or unpleasant occupation during the long winter evenings; and it is a work in which the help of the juniors of both sexes can be enlisted. I find that, unaided, I can get thru about 250 a day; and seeing that in this shape they are almost, if not quite, equal to full sheets of the new drawn foundation, I consider the time and labor expended on them amply repaid.

And now for the *modus operandi*: The only tools required are a small "straight edge" (or a little square piece of ½-inch stuff 4x4 inches), and an old thin-bladed table-knife—if the point be broken off square and this square top sharpened a bit, all the better, for it facilitates cutting out the corners and pop-holes. At the operator's right hand must be placed a lamp on a chair, so that he can easily hold the blade just over the chimney. After holding it so for a second or two, he passes it rapidly between the wood and the comb wherever they are connected, when out falls the latter unharmed. He then passes the empty sections to his assistant, if he has one, who scrapes off the wax still adher

ing to them, and places them in the scraping-box—of which more anon. The operator having a pile of combs before him, with the knife occasionally held for a second or two over the lamp, sets to work carving them up as economically as he can. Of course, there will be some waste, lots of odds and ends falling away, and which, together with the scrapings of the sections, will give about three pounds of nice, light colored wax per 1,000 sections thus treated.

Fixing the pieces in the renovated sections goes very rapidly once one gets in the way of it, and it is done thus:

Place the piece of comb in position, and with a piece of section held in the left hand, bear gently and evenly down on it. Having held the knife for two or three seconds over the lamp, slip it smartly in between the piece of comb and section, move it rapidly backwards and forwards, bearing down gently all the time with the bit of section in the left hand, when heigh, presto! it is fixt as firm as a rock. Perhaps the "Daisy" may be made to do it.

To adults who may find the work too "niggling" and tedious, and who, in their want of patience may be apt to deem the game not worth the candle, I would suggest handing the job over to the junior members of the family, especially where there are intelligent, light-handed lassies; reward them at the rate of, say, two cents per dozen, and they will delight in the task. It is better than throwing them in the pig-sty, the opinion of such millionaire (?) members of our fraternity as Mr. E. T. Abbott to the contrary notwithstanding.

The hopelessly dirty sections I discard, and, in some cases fit the combs into quite new ones. But by using what I may term my "Handy Scraping-Box," I manage, and that with very little labor, to restore the dirtiest looking sections to their pristine whiteness, or so nearly so that there is no question about putting them on the hives again. Indeed, the use, or success, of this box has far exceeded my expectations. Its construction is too simple to need much explanation thereof. It is made of stoutish stuff and holds six sections, which are rigidly fixt by means of a follower and a wooden thumb-screw. Where a "screw-box" is not available, a very good iron thumb-screw may be made by beating out flat the head of a big ordinary screw, after having made it white hot; the sharp point must be filed down a bit.

Having placed six sections in the box, and screwed them up, scrape the surface with an ordinary clasp-knife, having a round or dagger-shaped blade; then give them a brisk rub over with No. 1 sandpaper, followed up with No. 0, which restores the original polish. Turn the box over and do the other side. If the sides require it, which they seldom do, do them, too, by altering the position of the sections in the box. I find I can turn them out "like hot-cakes." I have not yet had an opportunity of testing the utility of this simple device for scraping and cleaning up full sections, but I fancy it will be found very useful where such are more than ordinarily dirty or stained. The sections being held rigidly they can be scraped, and if requisite, touched up a bit with No. 1 or No. 0 sandpaper far more vigorously and efficiently, and with less fear of damage than when held loosely in the hand and done one by one. As it costs, so to say, nothing to make it, and there is no patent on it, I would advise every one to try this arrangement, and those who don't like it can simply tack a top and bottom on the box, with a slit in the top, and make a money-box of it—tho I fear in that shape it will be found, nowadays, just about as useless. Well, then, kindle the fire with it, or give it to mother-in-law to keep her cotton-pools in.

South Africa.

### Distance Between Center to Center of Frames.

BY G. M. DOOLITTLE.

A CORRESPONDENT writes that he has an apiary of 100 colonies, and thinks of adopting a space of one and  $5/16$  inches from center to center, as the right frame-space for the future in his apiary, he having formerly used a space of  $1\frac{1}{2}$  inches. He asks, "What do you think of the venture?" and wishes me to give my "think" in the matter in the columns of the American Bee Journal.

Well, to be candid, it is a venture I should not want to go into. If I thought I could see some gain in such close spacing I would try it on, say five, or not to exceed ten, of the 100 colonies for a year or two, and then if it pleased me I would fix the remainder in that way.

Here is something that so many lose sight of, and rush headlong into any project which seems good to them, using

the whole apiary to experiment with, when any feasible looking experiment could be just as well tried with half a dozen colonies as with 100, and if the pet project proved a failure but little loss would result, as against five to ten times as much where the whole apiary is tried, which latter is something hard to be borne, generally resulting in sending the experimenter from the ranks of apiculture with the idea that "bee-keeping does not pay."

I really wish some one competent would tell us, in a logical way, just what there is to be gained in a real, practical dollar-and-cent way, by the close spacing of frames which is recommended every now and then. I have carefully experimented for several years to find out whether I was wrong in sticking to a spacing of  $1\frac{1}{2}$  inches from center to center of frames. That is the average, as I have found by measuring many times, which the combs are apart, when built by bees in box-hives where they have their own way in the matter, and so far I see no practical reason for departing to a closer spacing than Nature taught the bees to use.

During early spring a greater space is needed between frames to keep up sufficient heat for brood-rearing than later on when the weather is warm. If there could be artificial heat used so that the hive could be kept warm enough for brood-rearing in any part of it during the spring months, then a closer spacing than  $1\frac{1}{2}$  inches might answer; but where the bees are obliged to create a heat sufficient for brood-rearing *inside of the cluster of bees*, and not inside of the hive, then the case is different. To thus create and preserve heat inside of the cluster, the bees must have more space than for a single tier of bees between each range of comb, this single tier being all that can congregate there where the close spacing of one and  $5/16$  inches is used.

In my experiments I have found that far more brood will be brought to perfection during the cool days of April and May with a  $1\frac{1}{2}$  spacing than with the spacing proposed by the correspondent; but when we come to July and August weather his spacing will work fully as well as the  $1\frac{1}{2}$ -inch spacing. If it were not for the fact that one square inch of brood in April and May is worth more than ten times that amount in July and August; and also that, do the best we can, it is hard work to secure the necessary number of bees to work to advantage on the early flow of honey coming from white clover, this close spacing might come into general use. But as it is I can only look on so close a spacing as that proposed by our correspondent as a move in the wrong direction.

### TRANSFERRING BEES.

Another correspondent writes that he wishes to transfer some bees from box-hives to movable-frame hives during fruit-bloom, and asks, "Which is the better way to do it? By the old way of cutting combs out and fitting them into frames, or by what is known as the 'Heddon plan'?"

The old plan is the only one I would use at the time of fruit-bloom, and, in fact, it is the way I prefer at any time of the year, unless the colony to be transferred has such crooked combs that it will cost much labor in fitting them into frames. The Heddon plan of transferring, as I understand it, is to drive the bees from their combs, leaving only a few bees to care for the brood, and hiving those driven on frames filled with comb foundation. In 21 days the old hive is driven again, taking *all* the bees this time, these last being hived on frames of foundation, the same as the first "drive." The combs from the old hive, now free from brood and bees, are to be rendered into wax. But, if I am correct, Mr. Heddon never advised this way of transferring where the same was to be done in early spring or in fruit-bloom, before the hives were filled with bees and brood.

With me, the time of fruit-bloom is just the time for the bees to get under good headway rearing brood, and making a general preparation for the main honey harvest from white clover and basswood; and should we transfer by the Heddon plan at this time, we would break up all of these plans of the bees just at a time when we wish every egg possible laid by the queen, so the bees from them can come on the stage of action when the honey harvest is on. Hence, by using the Heddon plan at this time of the year, we would so shorten our "crop" of bees that it might make all the difference between a good crop of honey and no surplus at all. One hundred and twenty-five dollars would not tempt me to allow any person to transfer 25 colonies of bees for me in such a way in fruit-bloom; as I should calculate that I would lose that much or more by so doing in an average season.

Then, the Heddon plan involves the melting up of all



combs in the old hive, which is a thing I object to. I never could understand the logic which calls for the destroying of good, straight worker-combs for the sake of making the wax which comes from them into foundation, fitting the same into frames, obliging the bees to draw it out, and add more wax to it in the process, that we might have only good, straight worker-combs again. If any wish to go thru this process, of course I have no objections; but I want them to understand what they are doing before they start in the matter, and not do it ignorantly, because some one recommended the plan without giving the whole logical outcome of the matter.

Fruit-bloom is a good time to transfer bees by the old way; in fact, so transferring at that time, where their own combs are fitted into frames, seems to give the bees renewed vigor, so that the colonies become better fitted for gathering surplus honey than do those of the same strength that are left undisturbed. In case any colony has very crooked combs I should leave them until just after the honey harvest, when it would be well to use the Heddon plan, feeding if necessary to prepare them properly for winter. Or, if the old hive is not suited for obtaining surplus honey from it, this transferring could be done at the commencement of the harvest, when, by using the Heddon plan of preventing after-swarms, the first "drive" might store some surplus honey.

Onondaga Co., N. Y.



The "Old Reliable" seen thru New and Unreliable Glasses.  
By E. E. HASTY, Richards, Ohio.

#### BEE-STOMACHS—HONEY VS. SUGAR FOR INVALIDS.

An apparent slip occurs in the able article of Prof. Cook, page 370, where he says that the true stomach of the bee is larger than the honey-stomach. Very likely this is the visible appearance, when both are empty; but the fact that the latter when full is more than half the weight of an unloaded bee, rather makes it impossible that the former should have the greater capacity.

Say, Prof. Cook, I'm getting weak in the faith about honey being *practically* better food for invalids than granulated sugar. After a long period of valetudinarianism, intentionally consuming much sweet, and with my prejudice (if I had any prejudice) in favor of honey, you will see me eating sugar as a horse eats oats, and not much honey. Sad case of backsliding, isn't it? And Gleanings in Bee-Culture, not very long ago, holding me up to the world as its champion honey-eater!

#### LOCUST BLOOM AND TREE.

That spray of locust bloom, page 369, is very lifelike. One disadvantage of the locust that Mr. Schmidt left out is its creeping roots, which infest sandy soil somewhat in the style of an arboreal Canada thistle.

#### SALTING BEES.

The man who lets cattle get at his home-apiary till they find out that salt can be had by licking at the hive-entrances—I rather guess he's a gone case, as a bee-keeper, and that we need not waste sympathy on his woes. Possibly in some out-apiaries the matter may stand somewhat differently. Somebody else's hired men may have to be depended upon to shut the gaps they open. Better omit salt in such situations—and perhaps Editor Root is too penny-wise in objecting to the cost of sulphate of copper for them. A barrel of salt to serve 400 colonies for two years—a quarter of a cent per colony per year is "too awfully cheap." Page 376.

#### HAULING HOME EXTRACTING-COMBS OF HONEY.

Aikin's new style of hauling the combs of honey home from the out-apiary before extracting seems to have just one drawback—needs 300 extra combs to work it. The full double set of combs are supposed to be sufficiently hard to get—and keep—without these extras. Where there's a will there's a way, however. His Ku-klux horse with canvass all over him, head and ears—well, if the horse doesn't ob-

ject to it the rest of us needn't. May perhaps be the best way to deal with a serious difficulty. Page 377.

#### A NON-SWARMING METHOD.

The Blakely non-swarming method seems to be a practical one—don't tell us to use a great lot of combs of brood without bees "wherever they are needed," as I was getting ready to hear as I read it. The objection is that the extracted-honey part of the business is boomed, and the section-honey part deprest. With good runs of honey at the right time it might prove quite satisfactory. Page 381.

#### CLEANING BEESWAX OFF TIN.

A jet of hot steam for cleaning the beeswax off bright tin is probably an excellent idea—except for the large section of us who haven't got the jet of steam. My working idea, in this regard, is to devote certain tin utensils to use in beeswax and *absolutely nothing else*, and then let the films of wax remain on. Keep 'em bottom up when not in use, to avoid adhering dust. Page 381.

#### THE MIDDLE SECTIONS IN A SUPER.

The question is raised, page 382, whether sections stored directly over the middle of the brood do not incline to have a more sodden appearance than those at the edges. Worth wrestling with. I'll guess off hand that it's mainly accident. They don't store at all at the far edges excepting when the honey-flow is quite good; and a good flow favors fine appearance.

#### AVERAGE AGE OF QUEEN-MATING.

Thirty German queens mated at an average age of six days. The range was from four days to nine. The result with a lot of American queens nearly the same—average a little older. We should refresh our memories with these fundamental facts once in awhile. And let's see, I believe we are taught that the time between mating and commencing to lay is very short, so that the total time from emerging to laying is usually a little over a week, but sometimes less. Page 382.

#### THOSE TWO "WEST"-ERN WOMEN.

And what have we here, page 385? Mrs. West, and a daughter bigger than herself, and the plump statement underneath that Mrs. W. does all the work. Guess that's a slip of some sort—notwithstanding that our observations in this lazy, butterfly world prepare us to believe just that. Too honest and resolute a look on the younger woman's face—and printed on her costume. The ladies have a beautiful spot. They believe in porticos (which more than half of us have discarded.) And they manifestly believe in having things snug. None of your spread-all-round-for-a-mile tactics in their lemonade.

#### TOO SCIENTIFIC TERMS IN QUEEN-REARING.

Glad Doolittle didn't stop with saying the bulk of a B shot in royal jelly for cells. Some of us, like myself, don't know "B" from "bull's foot" in the terms of a sport which we care not a fig for. But four turnip seeds, ah, that's coming to terms of precision! And the jelly, it seems, is to be well shaken before being taken—careful there not to break the bottle! Seal up the natural cell yourself (with no queen in it), and keep the jelly for use for two weeks if you need. None but the experienced hand could have told us that. Hardly expected Doolittle to aver so decidedly the uselessness of meal and flour as pollen substitutes—but I have no protests to put in. Page 386.

#### THE APPLE AND EVOLUTION.

Mr. Jolley is a little extreme in his evolution teachings, page 386. We can hardly depend upon seedlings from cross-fertilized seed bearing fruit "in all probability" better than the parents. "Occasionally" is all that can be truthfully said there. And about the apple being developd from the wild rose, I guess none of the great masters of evolution would quite consent to back him there. If we can stand the evolutionary millions of years, it comes to this, that the apple and the rose were both developd from a common parent (not now in existence at all), not that the apple was developd from the rose, or the rose from the apple. Better say the apple sprang from one or more of the crabs of the eastern continent—and not try to unwind the evolutionary ball any further than that.

#### BROOD-CHAMBERS FOR EXTRACTING AND FOR SECTIONS.

And so Aikin thinks a hive for extracting should have a larger brood-chamber than if run for section honey. May

be he's right; but somehow it doesn't hit me yet, at least does not hit me *effectively*. I use about the same chamber for both, and *intend* to put heavy combs enough below in the fall to make wintering safe. But, then, my field excels in late fall flows. It does look as if the handling of half-stories, which Mr. A. tells of, was excellent for an out-apiary where swarming must be fought to the utmost. Page 387.

#### BEE-PARALYSIS—"SWEET-CLOVERING" WORN-OUT LAND.

Adrian Getaz is of interest on the subject of paralysis, page 389. Camphor checking it, but also giving flavor to the surplus, and as one has to keep intermitting his remedy. Especially noteworthy is his opinion that old queens will eventually get to lay infected eggs, to the utter ruin of the colony. Of course, the natural remedy in that case would be to keep the colonies supplied with young queens. If guesses were allowable in such serious investigation I should guess that *some* young queens would get their ovaries affected, and that some old ones would escape. However, "All young queens" is not a bad motto, even where paralysis does not prevail.

His scheme of buying worn-out land for a trifle, getting it set in sweet clover, and then selling it at a rise looks fascinating. But there used to be a fable the moral of which began—

"All ye who would your trades forsake,  
Take warning from my sad mistake."

No doubt the buying of the land would go merrily.

#### WINTER EXTRACTING OF HONEY.

H. D. Burrell sounds rather extreme on winter extracting 90 degrees of temperature for 48 hours; but may be it's practical. Page 390.

#### ACTION AND NON-ACTION OF STUNG ANIMALS.

We seem likely to find in the end that animals of various kinds, under very severe stinging, will sometimes run violently, and sometimes refuse to stir at all. Page 395.

#### CEMENT-COATING WIRE-NAILS.

Some will be quite glad to know that they can cement-coat their own wire-nails by such a simple process as that on page 398—just a snuff of finely powdered rosin sprinkled on them when they are hot enough to begin to look blue.



CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

[The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.]

#### Sweet Clover as Hog Pasture—Salting Bees.

1. What do you know about sweet clover for hog pasture? I note what Mr. Boardman says about it in "A B C of Bee-Culture."

2. I have two watering devices for bees as prescribed in "A B C of Bee-Culture." These are kept supplied with fresh water, and each morning I sprinkle salt over the boards. The bees are there thick. Is there any danger of overdoing the salting?

IOWA JOE.

ANSWERS.—1. I have no personal knowledge as to the value of sweet clover as hog-pasture, and will cheerfully yield the floor to any one who has. I suspect, however, that it may be a matter somewhat of training with hogs, as it is with horses and cattle. There are places where I've seen sweet clover growing along the roadside unmolested, while stock had eaten down all the grass about it. Yesterday I saw some places of that kind in a drive of 5 miles, but I saw more places where cows had eaten the sweet clover close to the ground. One fact about sweet clover I do not remember to have seen mentioned often. It is that stock seem to learn to eat the *dry* sweet clover hay more readily than the

green plant. My horses eat the green plant very sparingly, but will come at call out of green pasture and munch down the dry hay greedily. Possibly if conditions were reversed, and plenty of sweet clover were growing in their pasture instead of almost none, they might show a different preference. About a ton of pure, sweet, clover hay was put into my barn this summer, and most of it is gone already. I wish I could have the mow filled with it.

2. It is not likely that you can get bees to take more salt than is good for them.

#### Questions on Swarming.

I had a swarm of bees July 5, and hived it all right, and the next day (July 6) I had another from the same hive. Is that a simple occurrence, or something extraordinary? Both swarms had a queen, and another was left in the cell in the hive.

ILLINOIS.

ANSWER.—In the great majority of cases, the first after-swarm will not issue till more than a week after the prime swarm. Then the after-swarms, if more than one, will follow in quick succession. In your case the two swarms were practically after-swarms, altho there may have been no prime swarm. About June 27 was the time for the prime swarm, and it may have issued and the queen was lost, or something may have happened to the queen at the time the prime swarm issued, and the swarm may have returned. Or, there may have been no preparation for swarming at all, and by some means the old queen was killed. In that case there would be several queens reared, and if everything were favorable for swarming you would have just what happened in your case.

#### Wants Queen-Rearing Directions Explained.

On page 408 is an editorial beginning with heavy type, "Say what you mean." If Mr. Pridgen had done this in all parts of his prize article on queen-rearing published in the same number, so that a novice could get clearly his intended meaning, it would not have been necessary to have troubled you to make one particularly obscure passage clear. I have read it, and re-read it, perhaps 25 times, hoping it would clear up, but it is still Greek. The passage I refer to is on page 403, viz:

"If one is making a business of queen-rearing he should keep a colony at work as cell-starters [Is this colony to be queenless?] Fill a body [hive I suppose] with combs of brood [any bees? or a queen?] and place it *over* [Italics mine] the colony selected [for cell-starting, I presume] with an excluder between. [Where is the queen which is to be excluded, above or below?] Twelve days later [why 12 days?] place this body on a bottom-board [which body, the top or bottom one?] minus the most of the board, with wire cloth tacked on as a ventilator. [That's certainly lucid enough.] Stop the entrance so that no bees can escape." [What becomes of the excluder, which was below this body, when it was on top of the other? Neither are any directions given for the disposal of the other body!]

I will thank you to rewrite the above paragraph, if it will not be regarded as a breach of etiquette on the part of the Bee Journal, which I presume is under obligations of courtesy to the author for the privilege of publishing the article referred to.

In conclusion, I beg to say that it is the plain duty of those who, being familiar with a subject, and undertaking to enlighten the reading public by publishing treatises, should gravely weigh every item of the subject-matter, eliminate all obscurities, and make it so plain to the way-faring man that he might go and do the thing taught.

APIS MELLIFICA.

ANSWER.—It is no breach of etiquette whatever to try to make clear anything not fully understood in the columns of this journal, and Mr. Pridgen would be one of the last to find fault with anything of the kind. He has shown a very commendable inclination to make known to others the things he has learned no doubt after much hard thinking and experimenting, and has made no light contribution toward progress in queen-rearing. It should be remembered, however, that it is much easier to find fault than to give the remedy, and many a one who might find some cloudiness about Mr. Pridgen's instructions might not be able to write with greater clearness. It should also be remembered that Mr. Pridgen is an expert in the line of queen-rearing, and the matters about which he writes are



all ABC to him, on which account he may not go into minutiae sometimes as much as might be desired by the rest of us who do not know so much about queen-rearing. Mr. Pridgen should not be held accountable, probably, for what is most likely a printer's error in a passage you mention, "minus most of the board." That "board" should read "brood."

Answering your questions, I understand Mr. Pridgen to say that a colony is to be selected from which bees are to be taken to act as starters of cells. Put an excluder over the hive containing this colony, and on this excluder put a hive body. Fill this hive body with combs of brood obtained from other colonies. No queen is to be given to this upper story, and no bees need be given, for the bees will come up from the lower story thru the excluder to care for the brood. I do not know for certain why Mr. Pridgen would leave matters in this condition for 12 days, but can imagine two reasons—one, that there may be no unsealed brood from which to rear queens; another, that a force of bees may have time to hatch out. It is quite possible he may have some different reason, and we'll be glad to have him tell us.

The queen remains all the time in her own hive. At the end of 12 days the upper story is taken from over the excluder, still leaving the queen in the lower story, and the upper story with its now queenless bees is placed in any convenient place on a bottom-board with wire-cloth tacked on as a ventilator, so that no bees can escape and yet the bees have abundance of air. This may be accomplished by having a very deep bottom-board with the entrance closed with wire-cloth, or a frame the size of the bottom of the hive may be entirely covered with wire-cloth, and the hive placed thereon, hive and wire-cloth both being raised by means of a block under each corner.

No directions are given for the disposal of the other body in which is the queen, nor of the excluder over it, for nothing is to be done with them. They are left on their own stand where they were at the beginning.

The substance of the whole story is that this removed upper story contains a lot of bees shut up with no queen, and with nothing from which to rear one, and just crazy for the cells you will give them.

### Perhaps Superseding the Queens.

I have two colonies of bees each of which has a young laying queen. Their first brood is just capt over—good worker-brood. Now they both have started queen-cells with larvae already in them. What causes that? They are not very strong yet. They have each 3 or 4 frames of eggs, larvae and sealed brood. One of the queens seems very prolific.

ILLINOIS.

ANSWERS.—I don't know, but I suspect the bees are trying to supersede their queen. Those who do not clip their queens are hardly aware how often a queen is superseded when only a few weeks, and sometimes only a few days, old. The queens seem all right, appear to lay well and all that, but for some reason the bees are not satisfied with them, and supersede them. If they are thwarted by having the cells torn down, the queens are likely to fail rather suddenly, and it looks as if the bees could foresee their coming failure.

### Brood-Frame Cover—Absconding Swarm.

1. What is the proper material to cover brood-frames to keep bees from going into the super when there are no sections on?

2. I hived a swarm in a new dovetailed hive, and set it in the shade of an apple-tree, but had the brood-frames covered with a new table oil-cloth; but after they were in the hive a few hours they all went out and left. I had arrived just as the last bees were coming out of the hive, and I tried to make them cluster, but they would not stop. I tried to stop them with a spray pump, by spraying water on them. Why did they leave the new hive? MICH.

ANSWERS.—1. The proper way is to have no supers on when you don't want the bees to enter them. Don't think of having a super of sections on with something to prevent bees getting into them. Put it down as a fixt rule that sections are never to be put on except during a flow of honey, or just before one is expected. Possibly you may refer to having a super on a hive without any sections in it, the super being filled with planer-shavings, leaves, or something of the sort for winter. In that case it is desirable to have some covering over the brood-frames so the bees cannot get

up into the packing. Probably nothing is better for the purpose than burlap, altho cotton-cloth or almost any kind of cloth will answer.

2. That "new table oil-cloth" was no doubt somewhat to blame. Oil-cloth, when new, has an objectionable smell, and bees are fastidious in that respect. You might put it over an established colony, and they would stay all right, because unwilling to desert their brood and stores, but when first hived they have not sufficient inducement to stay in an objectionable place. Even if there were no smell about the oil-cloth it is not a good thing to put over a newly-hived swarm. It is too close and warm. One of the things of most importance to look after in the case of a newly-hived swarm is to see that they have unlimited ventilation. Raise the hive on blocks, and for at least the first day or two leave the cover partly off or partly raised. Hardly any danger of leaving the hive too open for the first two or three days.

**Diagnosing Pickled and Black Brood.**—I never have any difficulty in diagnosing a sample of real foul brood. The symptoms of that disease are so marked that it is very easy for one who is at all acquainted with its characteristics to determine whether or not it is a case of *Bacillus alvei* (foul brood); but to decide between a case of black and pickled brood is not so easy, for the two look very much alike, and under some conditions they are alike so far as external appearances are concerned. Knowing that a good many bee-keepers had sent samples of diseased brood to Dr. Howard, I felt that we could hardly ask him to make such diagnoses without compensation, for he is not in any way connected with an experiment station or any government work; and a man of his attainments as a bacteriologist ought not to be asked to perform a difficult service of this kind, requiring years of preparation and study, for nothing. As yet, I know of no one in this country who has been able to discriminate between one and the other absolutely. Black brood, as we know, is decidedly contagious—perhaps more so than foul brood, and quite as destructive. Pickled brood is a mild form of disease; but so far as I know it is not very destructive. Very often it will disappear of itself, and in any event a mild treatment will eradicate it entirely.

We will suppose that a bee-keeper discovers something in one of his colonies that looks suspicious to say the least. If he can know absolutely, by sending a sample to some competent expert, that he has neither black brood nor foul brood, this knowledge may be worth to him hundreds and possibly thousands of dollars.

Very recently a queen-breeder, who has some 500 nuclei, and who is carrying on the business of queen-rearing very extensively, sent a sample of diseased brood, desiring us to wire him at once what it was. The sample came duly to hand, and I immediately wired back, "Not foul brood—possibly black or pickled brood." At the time of sending a sample to me he sent one to Dr. Howard also, and the latter very promptly wired him that it was nothing worse than pickled brood. This information was worth to him hundreds of dollars; otherwise he would have withdrawn his advertising, broken up his nuclei, practically throwing away a splendid trade in queens, at the same time ruining his business perhaps for all time to come. He had only one case in his yard, and that was promptly disposed of.

While we are perfectly willing to perform such services so far as we are able, Dr. Howard can not afford to do them for the mere love of the pursuit. I wrote him, asking him what it would be worth to diagnose diseased samples of brood, and he replied that he thought he could afford to do it for \$2.00; and this I regard as very reasonable, considering that he may have to spend hours with the microscope; so I would suggest that doubtful samples be sent to Dr. W. R. Howard, Fort Worth, Tex., with a letter of explanation, and don't forget to send the money.

In a letter recently received from Dr. Howard, he gives specific directions by which every bee-keeper can diagnose to some extent for himself. Of the three particular brood diseases he gives the following diagnostic signs:

#### FOUL BROOD.

GLUE-LIKE consistence of the mass, and the offensive smell.

#### BLACK BROOD.

JELLY-LIKE consistence of the mass, the absence of ropiness noticed in foul brood, and the peculiar sour-like smell.

#### PICKLED BROOD.

ALWAYS WATERY, turning black after being attacked with the mucor fungus—a black mold—and by placing the larvae in a sterilized chamber, keeping warm and dark, in three or four days the white fungus of pickled brood appears. I nearly always place a few larvae of every specimen of all kinds of dead brood. Foul brood and black brood are attacked with a fungus, tho kept for months.

WM. R. HOWARD.

—Gleanings in Bee-Culture.



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**NOTE**—The American Bee Journal adopts the Orthography of the following Rule, recommended by the joint action of the American Philological Association and the Philological Society of England:—Change "d" or "ed" final to "t" when so pronounced, except when the "e" affects a preceding sound. Also some other changes are used.

**Why a Bee-Keepers' Exchange?**—Prof. Cook seems insistent that every bee-keeper should be a member of something like a Bee-Keepers' Exchange. What need? Bee-keepers have heretofore gotten along without anything of the kind, and they can get along now. Their attention has been chiefly given to the best means of securing a crop of honey, and that can be done without any such thing as an Exchange. A man can produce just as much honey, whether he is to get 5 or 15 cents a pound for it. He can produce the same amount if he has no market quotations, and takes his snow-white section honey to the grocery and gets for it just the same price as the grocer paid for some dirty black stuff not fit to put on the table.

And yet no intelligent bee-keeper would be satisfied not to inform himself as fully as possible, so as to get something like a fair price for his product. He watches the bee-papers to see whether the crop is large or small, to see what the prices are in the market reports, informs himself as to his own particular locality, and makes some effort to get the most he can for his honey. If it be admitted that he is right in doing this, it is hard to stop short of the logical conclusion that a bee-keepers' exchange is something almost in the line of a necessity.

When a man, who has shown himself for so many years unselfishly interested in the advancement of bee-keepers' interests as has Prof. Cook, urges any measure for the general good, it is well to give heed. The illustrations

he gives in the line of fruit-growers are strong, especially that of the raisin-growers, with an increase of a million dollars that seems to be credited to the account of co-operation. A significant fact is that the 75 percent that entered the movement at its beginning increased to 90 percent after trial.

It would not be amiss to quote what has been already done by organization on the part of bee-keepers. A pitifully small percent of the bee-keepers of the country banded together for a few years, mainly with the idea of resisting the invasion of their rights as to location, yet that small band has made it safe for every bee-keeper in the country to locate where he pleases, with no fear that some crotchety neighbor may have an ordinance past telling him to "move on."

Adulterators of honey have boldly flaunted their wares in the faces of honest bee-keepers all over the land, and the first show of weakening on their part has come from the organized effort of a comparatively small number of men acting as one body.

If Exchanges are good for others, why not for bee-keepers? If bee-keepers combined have secured advantages against invaders of their rights, and against adulterators, why may not combination be a good thing for them in the way of buying and selling? At any rate, the question is a live one, and these columns are open for its full and free discussion. Objections and advantages will be equally welcomed.

#### Queen-Excluders When Working for Extracted Honey

are in common use, the reason given for their use generally being that the queen is prevented from going up to lay in the extracting-combs. J. B. Hall, the Canadian veteran, gives in the Canadian Bee Journal another as his chief reason. By having an excluder between the brood-chamber and the extracting-super he is never in any anxiety for fear the queen will be injured, and can thus work much more rapidly. A few workers may be killed as the result of rapid handling, and it matters little, but it would matter a good deal if hasty setting a super on should mash a queen. If an excluder is on, there is no queen to be considered; she is safe below the excluder.

**An Improvement in Queen-Cages** that seems to have originated in Medina or vicinity, seems likely to be of real service. As sent out heretofore, the Benton shipping-cage has at one end a cork closing a hole that leads thru the candy to the queen. The cork is pulled out, and as soon as the candy is eaten out the queen is liberated. The longer the journey the more candy eaten out by the attendant bees in the cage, and if a very small portion is left the introduction may be too sudden for best results. By the new plan no cork is used. Instead thereof a bit of pasteboard is nailed over the hole, three or four small perforations being in the pasteboard. The candy comes close up against the pasteboard, and the bees must gnaw away the pasteboard before they can eat the candy. This avoids the possibility of too sudden introduction, assuring greater safety in every case. When a customer receives a queen, there is no cork to withdraw; all he has to do is to pry off the cover and put the cage in the hive. The bees do the rest.

**Some Things Proved.**—Mrs. A. J. Barber, of Montezuma Co., Colo., has this to say, in Gleanings in Bee-Culture, about the things she has proven at least to her own satisfaction:

"Since the beginning of the new year I have been looking back over the nine years that I have been with the bees, and taking stock, so to speak, of the points that I have proved to my own satisfaction. I have been in the bee-



business, first, because it was necessary that I should have some money-making business that I could attend to while caring for my home and family; and, second, because I loved the work, and felt sure that I could do better in it than anything else that would not require more capital to begin with.

In the nine years I have never had a failure. Last year was a short crop. There was a long drouth, and water failed for irrigation. We had not quite 9,000 pounds of both comb and extracted honey from 130 colonies spring count.

Now, the points that I have proved to myself are these: That careful, patient work and management are essential to success.

That comb and extracted honey can be produced with profit from the same apiary at the same time.

That the wax and vinegar may be made to pay the cash expenses of such an apiary.

That with the exercise of a little ingenuity and forethought two apiaries of from 150 to 200 colonies of bees can be managed by a woman and a little boy, with but very little other help except in hive-making or nailing up fixtures.

That one who makes a business of bee-keeping should take all the best bee-papers, and keep up with the times.

That the person who depends upon luck generally has bad luck.

I have proved, in an experience of six years as inspector of bees for this county that the treatment of foul brood can not be made too thoro, and that the best use to make of honey from infected colonies is to burn it or bury it very deeply.

I have also settled the hive question, for myself at least. The 8-frame dovetailed is my choice.

**Stingless Bees** are of several kinds, all small, and too tender for anything but a warm climate. The small amount of honey they produce, and that of poor quality, makes it doubtful that they will ever have commercial value, but the following description of the nest of *Melipona togoensis*, from the British Bee Journal, may be of some interest:

The nest was in a hollow branch of a tree. It consisted of three parts (1) the nest proper, with the brood-combs; (2) the pollen and honey-pots; and (3) the entrance-hole and passage. The nest proper was 24 cm. long. In shape and structure it was apparently very similar to an ordinary wasp's nest, for there were twelve horizontal slabs of comb, of which the middle one was the largest, and the cells were constructed on one side only of the comb. The combs were connected to one another by pillar-like supports, the whole being encircled by a paper covering. The material was not, however, the familiar grey "papier mache" of the wasp, but a dark brown kind of wax. The cells were circular or irregularly hexagonal, not regularly hexagonal as in the comb of the honey-bee.

The honey-pots, which occurred in a separate part of the nest, were egg-shaped, and of a much larger size than the brood-cells. They were used for the storage of honey and pollen.

**Stimulative Feeding** is practiced by W. O. Victor, as told in Gleanings in Bee-Culture, not to furnish directly bees for the harvest, but to furnish the bees that may rear the bees for the harvest. So he feeds six or seven weeks in advance of the expected flow. Of course, it must be remembered that experience and care is necessary that stimulative feeding may not work the wrong way.

**For Smoker-Fuel** cotton waste is highly recommended in Gleanings in Bee-Culture. Not dry cotton, but that which is soaked in oil and is thrown away along railroad tracks after having been used as grease for the wheels. Mr. L. Highbarger, of Ogle Co., Ill., is the discoverer of this new smoker-fuel which is said to light easily, makes a good smoke, and lasts well.

**Weed Comb Foundation**, according to F. L. Thompson, in the Progressive Bee-Keeper, is more brittle than other foundation. Unless made very warm, it crumbles in cutting, thus wasting. A pound of it made full sheets and bottom starters for 118 sections.

## The Weekly Budget

DR. A. B. MASON, writing us July 14th, reported that he was getting very little surplus honey so far this year. He also refers to a very pleasant visit from Mr. C. P. Dandant and his daughter who were on their way to Paris. He says: "We had a good visit, and we got acquainted with a very nice young lady."

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MR. E. E. HASTY—our inimitable "afterthinker"—writing from Lucas Co., Ohio, July 18, says:

"The season now is largely spent, and not much to show for it in the way of honey; but in the 20 years I have run this apiary there always has been some surplus (location rather strong on late flows, and weak on early ones), so I'll just cheerfully hope I'll have some honey yet."

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MR. H. D. CUTTING, an ex-president of the National Bee-Keepers' Association, expects to be at the Chicago convention next month. Mr. Cutting has been partially blind for several years. We can assure him of a hearty welcome and a good time generally. Mr. Cutting had charge of the Michigan apiarian exhibit at the World's Fair, and so was in Chicago several months during 1893. All will be glad to see Mr. Cutting at the annual convention once more.

\*\*\*\*\*

MR. G. M. DOOLITTLE, of Onondaga Co., N. Y., wrote us July 17:

"There has been positively no honey here since apple-bloom, and I am feeding bees. This makes queen-rearing up hill work. I do not expect to be at the Chicago convention next month."

Surely, Mr. Doolittle sends a discouraging report. And there will be a big hole in the Chicago convention if he is not there.

\*\*\*\*\*

QUEEN VICTORIA, as everybody knows, has, for the first time in 40 years, made a trip over to Ireland. In commemoration of the event a box of one dozen sections of honey from the four provinces of Ireland was presented to her Majesty. The box containing the honey was specially made of Irish bog oak, by the Abbott Bros., with glass sides, and bore on the lid the letters V. R. in a silver shamrock pattern. It is a pity there has not been a little more mutual exchange of honey between those two nations during the last century. By the way, the Queen is just 81 as this is written. Her reign has now extended over a period of 63 years, exceeding by three years that of any other English monarch. Every fourth person in the world is one of her subjects.—Gleanings in Bee-Culture.

\*\*\*\*\*

THE YEAR BOOK FOR 1899 is a cloth-bound volume of 880 pages, 6x9 inches, issued by the Department of Agriculture at Washington, D. C. The law under which the Year Book is published says that it shall contain reports of bureaus and divisions of the Department of Agriculture, and such papers by experts, and such statistics and illustrations as the Secretary of Agriculture shall believe to be specially suited to interest and instruct the farmers of the country, and include a general report of the work of the department. Also, that there shall be printed 110,000 copies for the use of the Senate, 360,000 copies for the use of the House of Representatives, and 30,000 copies for the use of the Department of Agriculture, all for free distribution, postage paid, among the farmers, the only class specially interested. Each intelligent farmer who desires a copy of this very valuable book should write to his Representative in Congress, or to his Senator if he fails with the former. Each Representative has 1,000 books to distribute, and each Senator about 1,200. Send for a copy of it. It is the best "something for nothing" investment for the farmer that we know of.

**The National Convention Next Month**—don't forget it. The dates are Aug. 28, 29 and 30. The place—Chicago.

**The Chicago Convention of the National Bee-Keepers' Association** meets the last week in August, as will be noted by the following from Secretary Mason:

EDITOR OF AMERICAN BEE JOURNAL:—

Please allow me to remind the readers of the American Bee Journal that the next convention of the National Bee-Keepers' Association is to be held in Chicago, Ill., on the 28th, 29th and 30th of August next, commencing Tuesday evening, the 28th, at 7:30 o'clock.

The session will be held in Wellington Hall, No. 70 North Clark St., about a block and a half from the Bee Journal office, and about five blocks directly north of the Court House. The hotel at which members can secure lodging, etc., is the Revere House, southeast corner of Clark and Michigan St., only one-half block from the hall. Rates of lodging will be 50 cents per night, and several will have to occupy one room. To many bee-keepers this will be an "added attraction," especially as they will have good beds to sleep on, as Mr. York has been assured by the hotel proprietor. It may be possible that this hotel will not be able to accommodate all of the bee-keepers, altho the proprietor will do his best to see that it does. Each one attending the convention should secure a lodging-place as soon as possible after arriving in the city. There is usually no trouble in getting enough to eat at reasonable rates.

The program for the convention will be different from what it has usually been. There will not be to exceed one paper at each session, and the remainder of the time will be occupied in the asking, answering, and discussion of questions. The question-box will be in charge of such veterans as Dr. C. C. Miller, of Illinois; Rev. E. T. Abbott, of Missouri; D. W. Heise, of Ontario, Canada; C. P. Dadant, of Illinois; R. L. Taylor, of Michigan; O. O. Poppleton, of Florida; and the editor of the American Bee Journal.

On Wednesday evening the editor of Gleanings in Bee-Culture will give an "Illustrated stereopticon talk on bee-keepers I have met, and apiaries I have visited."

The papers will be from such noted ones as Thos. Wm. Cowan, of London, England; Dr. Wm. R. Howard, of Texas; Mrs. H. G. Acklin, of Minnesota; S. A. Niver, of New York; Herman F. Moore, of Illinois; and R. C. Aikin, of Colorado; and if you want to know what the papers are about, and assist in the discussion and enjoyment of the questions, please report in person at the above mentioned hall at the time indicated.

I have been unable as yet to learn what the railroad rates will be, but they probably will be as heretofore—one fare for the round trip from some localities, one and one-third from others, or a cent a mile each way in the Central Passenger Association territory. The exact rate may be learned by inquiring at any railroad station.

A. B. MASON, Sec.

**York's Honey Calendar for 1900** is a 16-page pamphlet especially gotten up to create a demand for honey among should-be consumers. The forepart was written by Dr. C. C. Miller, and is devoted to general information concerning honey. The latter part consists of recipes for use in cooking and as a medicine. It will be found to be a very effective helper in working up a home market for honey. We furnish them, postpaid, at these prices: A sample free; 25 copies for 30 cents; 50 for 50 cents; 100 for 90 cents; 250 for \$2.00; 500 for \$3.50. For 25 cents extra we will print your name and address on the front page, when ordering 100 or more copies at these prices.

**Belgian Hare Breeding** is the title of a pamphlet just published, containing 10 chapters on "Breeding the Belgian Hare." Price, 25 cents, postpaid. It covers the subjects of Breeding, Feeding, Houses and Hutches, Diseases, Methods of Serving for the Table, etc. It is a practical and helpful treatise for the amateur breeder. (See Prof. Cook's article on page 292.) For sale at the office of the American Bee Journal. For \$1.10 we will send the Bee Journal for a year and the 32-page pamphlet on "Belgian Hare Breeding."

"**The Hum of the Bees in the Apple-Tree Bloom**" is the name of the finest bee-keeper's song—words by Hon. Eugene Secor and music by Dr. C. C. Miller. This is thought by some to be the best bee-song yet written by Mr. Secor and Dr. Miller. It is, indeed, a "hummer." We can furnish a single copy of it postpaid, for 10 cents, or 3 copies for 25 cents. Or, we will mail a half-dozen copies of it for sending us one new yearly subscription to the American Bee Journal at \$1.00.

**Our Wood Binder** (or Holder) is made to take all the copies of the American Bee Journal for a year. It is sent by mail for 20 cents. Full directions accompany. The Bee Journals can be inserted as soon as they are received, and thus preserved for future reference. Upon receipt of \$1.00 for your Bee Journal subscription a full year in advance, we will mail you a Wood Binder free—if you will mention it.

**The American Fruit and Vegetable Journal** is just what its name indicates. Tells all about growing fruits and vegetables. It is a fine monthly, at 50 cents a year. We can mail you a free sample copy of it, if you ask for it. We club it with the American Bee Journal—both papers one year for \$1.10.

**The Premiums** offered this week are well worth working for. Look at them.

## Belgian Hares

Pedigreed and Unpedigreed Hares, any age, for sale.

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by return mail. Un-  
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BUY A SET TO FIT YOUR NEW OR OLD WAGON  
**CHEAPEST AND BEST**  
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wheel, any width tire. Catal. FREE  
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### Exceptionally Good Season.

The season has been exceptionally good here so far, and it has kept me busy to keep my 265 colonies supplied with surplus room, with the help of one man.

ERWIN WILLIAMS.

Otero Co., Colo., July 12.

### Catnip as a Honey-Plant.

I have been experimenting with various honey-plants for 15 years, and am now convinced that in southeastern Nebraska catnip excels all others in the secretion of nectar. In communities where it grows in abundance bee-keepers never fail to get a crop of honey. Wm. Burow, a German bee-keeper living 12 miles north, first called my attention to it 10 years ago, he having secured 250 pounds per colony of fine white comb honey from it in years when my bees only gathered sufficient to winter on. He has since

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119 Michigan St., Chicago, Ill.

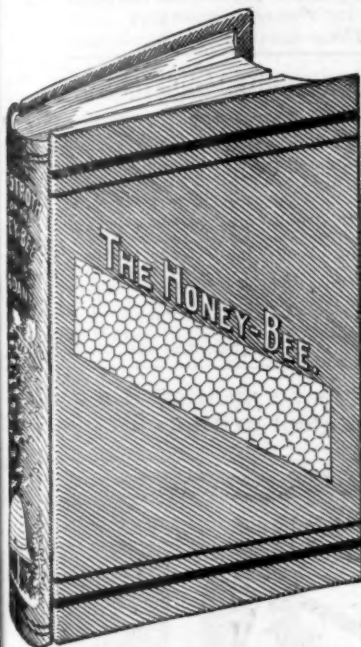


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# Queens

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Please mention Bee Journal when writing

gathered seed for me which I have sown on waste vacant land and the highways, so that now I have quite a good stand of it. I have my bee-yard sown to it and it helps shade the hives. When once sown, that is sufficient, as it will stand drouth and does not freeze out, spreads rapidly, and secretes nectar every year after the first. It grows about 3 feet high, commences to bloom about June 15, and blooms until frost. The honey is white, very much resembling white clover honey, and I have failed to detect any unpleasant taste in eating it.

The seed can be sown in the spring or fall, and will do well on almost any kind of ground, but I find it does best along fences and in stump ground not too much shaded. I find that farmers do not object to having it sown on the highway as they do sweet clover.

If catnip is plenty by the side of sweet clover the bees will visit the clover very sparingly. From my observations I am convinced that it secretes in this community four times as much honey as sweet clover, which I regard as the next best honey-plant.

Our bees wintered poorly last winter. We lost from spring dwindling 20 to 40 percent. This caused a rush to get out of the bee-business, but those of us who remained have nothing to regret; notwithstanding we had a hail-storm that destroyed our basswood flow and greatly damaged sweet clover.

J. L. GANDY.

Richardson Co., Nebr., July 16.

## Expects Little Surplus Honey.

Bees are lightly brooded, and working occasionally today, swarming some, but are not gathering much honey, and of poor quality. Josephus' famine cycle—5 years past and 2 to come—after that I expect some good honey seasons. My health is poor and I am in no other business but bee-keeping. I am 67 years old, but I have patience to wait for that cycle to pass. I had no surplus last year, and expect but little this year. Just now there is plenty of rain, and a moderate honey-flow.

E. H. STURTEVANT.

Washington Co., N. Y., July 14.

## Third Poor Honey Season.

Bees have done nearly nothing so far this season. Prospects are gone for surplus. There is lots of clover but no honey, and the third season of it.

J. C. KELLY.

Tama Co., Iowa, July 14.

## A Lively Hiving Experience.

Last fall my brother (Glen) was given a swarm of bees, and then purchased 3 more. Then I traded with him for one of them, and this spring he subscribed for the American Bee Journal. The bees wintered as nicely as could be, and the first swarm, the biggest of the season, came out May 15th, and went right straight off. He followed them for a mile on the run, and they went out of sight.

To-day my swarm came out. (Whew!) I had just bought an old hive with combs to put them in, and there was a lot of candied honey in it, so I wet the combs to dissolve it so the bees could use it. I guess that made them mad,

Sharples Cream Separators: Profitable Dairying

H. G. Quirin, the Queen-Breeder,  
Is as usual again on hand with his improved strain of

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Price of Queens after July 1.	1	6	12
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for they staid just about an hour and then came out again.

Then I got stung in the hair, and my troubles began. The animals couldn't reach thru, so left the poison in my hair, and every bee I came near after that thought I had been into some meanness, and needed a popping. I dared not go within a rod of the flying bees on penalty of getting one or more in my hair.

They went back to the same place they clustered in the first time. I didn't have any more hives, so I tried to drive them back to the old hive by sprinkling them with water with the spray pump, and gave them an awful ducking. But they didn't go back worth a cent, and I got a stick and jarred them off. Didn't go back then, either. And some of them were so wet that they fell plump into the grass, and it took a full hour for them to get out and go back to the cluster.

When they got settled, Glen and a neighbor, Thompson by name, went up to cut off the limb. The bees had settled on one limb and a twig of another, so when they went to take it down the twig pulled out and pulled about half the cluster off. Thompson was holding the limb until Glen should get on the ladder. But the bees began to pop, pop, bang! and said neighbor jump and shook off half of the remaining bees, and Glen jump on the ladder real quick. Then he took the limb and walkt down without a sting, while Thompson solemnly affirms that he got a dozen. I had to get a pail of water and wash my hair out before they would let me alone.

The flying bees came down and began to cluster again, so Glen took them up on an old chicken-coop, and sat there for about an hour while they settled again. In the meantime—and a mean time it was—I got a frame of unsealed brood and put into the hive with the old combs.

**\$5.00** per month will pay for medical treatment for any reader of the American Bee Journal. This offer is good for 3 months ONLY—from May 1 to Aug. 1. Dr. Peiro makes this special offer to test the virtue of small price for best medical services. Reply AT ONCE.

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60-pound Cans, two to Crate.

I have 400 crates of two 60-pound cans each that were used once, and are nearly as good as new. I offer until this lot is exhausted at 5c per crate, or 10 crates at 45c each. New crates of two 60-pound cans each cost 85c. Speak quick. Root's goods at Root's prices, also Muth's Jars. Send for Catalog. HONEY AND BEESWAX WANTED. C. H. W. WEBER,  
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book on "Health" and we will send you a free sample, sufficient for you to try it and test its merits to your own satisfaction. Isn't it worth trying free? It positively cures. Price 10c and 25c per box. Don't delay sending.

The Modern Remedy Co., Kewanee, Ill.



Then Glen handed down the bees, and they let me alone as long as my hair was wet, and I shook them down in front of the hive. They went in all right that time, and have staid. I am proud of them now.

I suppose it is such things that give a fellow experience, but the going thru—O my!

If anybody wants minute directions about hiving bees without getting stung, apply to Glen Lewis.

E. A. LEWIS.

Montcalm Co., Mich., June 29.

### Good Year for Bees.

This is a pretty good year for bees. I started with 31 colonies in the spring, and now have about 50, and about 1,500 pounds of section honey. Last year I had 38 colonies, but 7 died last winter.

ALBERT EVERDING.

Marshall Co., Ill., July 17.

### Have Stored Some Honey.

My bees wintered without any loss, and have stored some honey. I have had only one swarm so far. They are on a town lot, so I can not increase them much. In fact, I do not want increase, so you see I have succeeded very well in this respect. A. SHAW.

Grant Co., Wis., July 12.

### Season a Failure—Sweet Clover—Fruit Kept With Honey.

Our bees have made a complete failure this season. It has been so dry that white clover dried up in June. We have had two little showers lately, but they can do the bees no good. I think they stored a little honey-dew or red clover honey for a few days, but I don't know where they got it.

We shall have to commence feeding soon to keep them alive, and in a condition to fill up for winter. They are hunting everywhere for a little nectar, and the raspberry patch is just swarming with bees. A few colonies stored a little honey in fruit-bloom, but they carried that all down into the brood-nest with the exception of one colony from which I took about 16 pounds.

In our neighborhood the farmers try very hard to keep the sweet clover mowed down along the roadsides, as they seem to have a great fear of it. Sometimes we see that mowed and all other weeds left. Bees do not visit it much here, not like they do raspberry and other fruit bloom, nor even so much as strawberry bloom. I believe much depends upon the weather whether plants secrete nectar or not. In years when it is very dry nothing seems to yield much nectar.

When we get nothing in the spring we are apt to get a fall flow of honey. I think it is because we generally have more rain in the summer or fall if we don't get but little in the spring, and for that reason it pays to see to it that our bees have enough honey in July and August to keep the colonies in good condition to gather the fall honey. As a rule smartweed and Spanish-needle spring up abundantly when summer rains come on, but much of the smartweed, or rather heartsease, which looks very much like smartweed on oat-stubble ground, is plowed by the farmers early in the fall, so the bees do not get near as much honey as

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Last winter's cut of basswood is the whitest it has been for many seasons. We are now making sections out of this new stock and therefore are in a position to furnish you with the very finest quality in the market.

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For sending us ONE NEW SUBSCRIBER to the Bee Journal for the balance of this year, with 50 cents, we will mail you FOUR of these pretty buttons for wearing on the coat-lapel. (You can wear one and give the others to the children.) The queen has a golden tinge. This offer is made only to our present regular subscribers.

**NOTE.**—One reader writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of the buttons] as it will cause people to ask questions about the busy bee, and many a conversation thus started would wind up with the sale of more or less honey; at any rate, it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."

Prices of Buttons alone, postpaid: One button, 8 cts.; 2 buttons, 6 cts. each; 5 or more, 5 cts. each. (Stamps taken.) Address,

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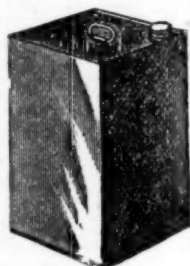
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5 boxes (or 10 cans) 50 cents per box; 20 boxes or over, 45 cents per box; 100 boxes or over, 40 cents per box.

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# BEE-BOOKS

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George W. York &amp; Co. 118 Mich. St. Chicago.

**Bees and Honey, or Management of an Apiary for Pleasure and Profit**, by Thomas G. Newman.—It is nicely illustrated, contains 160 pages, beautifully printed in the highest style of the art, and bound in cloth, gold-lettered. Price, in cloth, 75 cents; in paper, 50 cents.

**Langstroth on the Honey-Bee**, revised by Dadant.—This classic in bee-culture has been entirely re-written, and is fully illustrated. It treats of everything relating to bees and bee-keeping. No apiarian library is complete without this standard work by Rev. L. L. Langstroth—the Father of American Bee-Culture. It has 520 pages, bound in cloth. Price, \$1.25.

**Bee-Keepers' Guide, or Manual of the Apiary**, by Prof. A. J. Cook, of the Michigan Agricultural College.—This book is not only instructive and helpful as a guide in bee-keeping, but is interesting and thoroughly practical and scientific. It contains a full delineation of the anatomy and physiology of bees. 460 pages, bound in cloth and fully illustrated. Price, \$1.25.

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**Advanced Bee-Culture, Its Methods and Management**, by W. Z. Hutchinson.—The author of this work is a practical and entertaining writer. You should read his book; 90 pages, bound in paper, and illustrated. Price, 50 cents.

**Rational Bee-Keeping**, by Dr. John Dzierzon.—This is a translation of his latest German book on bee-culture. It has 350 pages, bound in paper covers, \$1.00.

**Bienen-Kultur**, by Thos. G. Newman.—This is a German translation of the principal portion of the book called "Bees and Honey." 100-page pamphlet. Price, 25 cents.

**Bienenzucht und Honiggewinnung**, nach der neuesten methode (German) by J. P. Eggers.—This book gives the latest and most approved methods of bee-keeping in an easy, comprehensive style, with illustrations to suit the subject. 50 pages, board cover. Price, 50 cents.

**Bee-Keeping for Beginners**, by Dr. J. P. H. Brown, of Georgia.—A practical and condensed treatise on the honey-bee, giving the best modes of management in order to secure the most profit. 110 pages, bound in paper. Price, 50 cts.

**Bee-Keeping for Profit**, by Dr. G. L. Tinker.—Revised and enlarged. It details the author's "new system, or how to get the largest yields of comb or extracted honey." 80 pages, illustrated. Price, 25 cents.

**Apiary Register**, by Thomas G. Newman.—Devotes two pages to a colony. Leather binding. Price, for 50 colonies, \$1.00; for 100 colonies, \$1.25.

**Dr. Howard's Book on Foul Brood**.—Gives the McEvoy Treatment and reviews the experiments of others. Price, 25 cents.

**Winter Problem in Bee-Keeping**, by G. R. Pierce.—Result of 25 years' experience. 30 cts.

**Foul Brood Treatment**, by Prof. F. R. Cheshire.—Its Cause and Prevention. Price, 10 cts.

**Foul Brood**, by A. R. Kohnke.—Origin, Development and Cure. Price, 10 cents.

**Capons and Caponizing**, by Dr. Sawyer, Fanny Field, and others.—Illustrated. All about caponizing fowls, and thus how to make the most money in poultry-raising. 64 pages. Price, 20c.

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they would if the stubble ground could be left unplowed.

Fruit put up uncooked in honey always sours for me. I have tried it several times. Possibly if the fruit could be cooked and the honey poured into it and just brought to a scald, and then canned, it would not injure the taste of the honey very much, and would keep. Peaches are better sweetened with honey than sugar before canning.

MRS. L. C. AXTELL.  
Warren Co., Ill., July 10.

## Slow Sealing of Honey—Sweet Clover in Mississippi.

I have taken very little honey so far. My bees are mostly in three stories, two of which are filled with brood and honey, but they don't seem to be in any hurry about sealing the honey. I rather fear I have been rearing bees at the expense of honey. I would like to ask Dr. Miller whether I am allowing them too much liberty, or whether I should have confined the queens to one story by excluders.

Generally, when I want to learn anything about bees, I watch Dr. Miller's department, as some "greenhorn" is sure to ask what I want to know; but I have watched in vain for some sure sign to tell when bees are preparing to swarm (some outward sign) without having to pry into their private apartments (brood-nest).

Will Mr. M. M. Baldrige tell us what his experience is with sweet clover in Mississippi? Is it best to sow in the fall or early spring, or will

any old wet spell do? I have a road, but little used, about 1¼ miles long, 23 feet wide, running thru my place. If I plow this up mud-pike fashion, and sow to sweet clover, would it likely cut much of a figure toward the support of 100 colonies? ALBERT VOUGHT.  
East Carroll Co., La., July 13.

## Not an Encouraging Report.

Last fall I put my 43 colonies into the cellar, and all came thru the winter in fair condition. They built up fine on the willow bloom, but when apple-blossoms came they died at a fearful rate, so that hardly any but young bees were left; but they had recovered again when white clover came into bloom, and did some good work until basswood opened, which was loaded with bloom, but the weather clerk was against us, so they had only about two days to make use of the basswood—it was too rough and windy. Our only hope now is the king of all—sweet clover—of which we have a great amount, if the people will let it stand long enough to give the bees a chance. I have as yet taken only about 1,000 pounds of honey. A. WICHERTS.  
Cook Co., Ill., July 16.

## Long Drouth in Minnesota.

This is a poor season for honey in this vicinity. There was no rain from the first of April to the first of July—dry weather and cool nights, no honey, and bees bred but little. Some bee-keepers had to feed thru the month of

## "The New Voice" Free for Five Months!

Everybody knows of THE NEW VOICE as the greatest temperance and prohibition weekly newspaper on earth. We have made arrangements with its publishers, so that we can offer it for the 5 months beginning with July 1,

**Free as a Premium for sending us one New Subscriber for one year to the American Bee Journal (with \$1.00.)**

If you would like to see a sample copy first, write a postal card to THE NEW VOICE, 315 Dearborn St., Chicago, Ill., and ask for it.

THE NEW VOICE is \$1.00 a year; but to any one who will send us 30 cents, we will have it mailed for the 5 months mentioned above; or for \$1.20 we will send any one the American Bee Journal for one year and THE NEW VOICE for the 5 months—July, August, September, October and November.

All who get THE NEW VOICE on these offers must be new subscribers to that paper, and not renewals.

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PAGE

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This is a good time to send in your Beeswax. We are paying 25 cents a pound—CASH—for best yellow.



May to keep their bees alive. I have not heard of any honey being taken off yet, and but very few swarms. There is not as much white clover this year as usual. Basswood is just coming into bloom, and the bees are in a rush. There has been plenty of rain for the last two weeks, and we are hoping for a better flow of honey the balance of the season. My bees have made a good beginning in the sections. I have had only one swarm to issue, but I am looking for more every day.

S. B. SMITH.

Millelacs Co., Minn., July 14.

### A Defense of Sweet Clover.

I notice on page 413, A. F. Foote says he wants sweet clover started in his locality but the farmers object. I would say they object to one of the greatest fertilizers that grows; also, cattle and horses can be taught to eat it, and when they do there is no better hay grows. It produces an abundant crop of fine-flavored white honey, the flow lasting for about three to three and a half months. In this locality about three-fourths of our honey comes from sweet clover.

I had as much opposition when I planted my first seed, but I planted the seed just the same; now nearly all the farmers see the value of it.

We also have cleome here with a yellow blossom. It is generally a little earlier than the pink. I would not favor planting it in this locality, as it is good only for bees, so far as I know; while some claim it pays to raise the seed for poultry. Sweet clover feeds my bees in summer and my cows in winter, and it produces good milk and honey.

I divide my bees, and have none fly off and leave me. C. W. SNYDER.  
Garfield Co., Utah, July 13.

P.S.—I extracted honey the last week in June, this being the first year that such a thing has happened earlier than July 15. C. W. S.

## The Emerson Binder



This Emerson stiff-board Binder with cloth back for the American Bee Journal we mail for but 60 cents; or we will send it with the Bee Journal for one year—both for only \$1.40. It is a fine thing to preserve the copies of the Journal as fast as they are received. If you have this "Emerson" no further binding is necessary.

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...FREE AS A PREMIUM...

The A B C of Bee-Culture says of it: "This is a beautiful plant for the flower-garden, to say nothing of the honey it produces. It grows from two to three feet in height and bears large, clusters of bright pink flowers. It grows natu-



ally on the Rocky Mountains, and in Colorado, where it is said to furnish large quantities of honey."

We have a few pounds of this Cleome seed, and offer to mail a ¼-pound package as a premium for sending us ONE NEW subscriber to the American Bee Journal, with \$1.00; or ¼ pound by mail for 40 cents.

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## NOTICE!

I have been running some colonies on shallow brood-chambers for comb honey, and I expect to unite them to the parent hive. Persons who have lost bees, and have vacant hives and combs, can have the bees of these colonies—queen and all—for \$2.00 each, to be forwarded in light cases. Safe arrival guaranteed. A limited number only. Write soon.

30Atf HARRY LATHROP, Browntown, Wis.  
Please mention Bee Journal when writing.

## Wanted to Exchange!

50-egg incubator and brooder for a honey-extractor; or will exchange for empty hives, bees, or honey. A. SHAW, box 199, Boscobel, Wis.  
30Atf Please mention the Bee Journal.

## HONEY AND BEESWAX

### MARKET QUOTATIONS.

CHICAGO, July 7.—Some new white comb honey is selling at 15c; not much offered and not much demand for it. Extracted is slow sale; best white, 7@7½c; best amber, 6½@6¾c; dark amber, 5@5½c. Beeswax, 27@28c.

R. A. BURNETT &amp; Co.

CINCINNATI, July 20.—White extracted honey, 7@7½c; southern extracted, 5½@6¼c, owing to quality. No comb honey on market. Good demand for beeswax at 25@27c.

Shipments of extracted honey from the South are more numerous than a few weeks ago, but we find it hard to make sales, owing to a slow demand. C. H. W. WEBER, 2146 Central Ave. ]

BUFFALO, July 20.—For strictly fancy white one-pound comb honey we are getting 16@17c. Any grade sells high—10@15c, as to grade.

BATTERSON &amp; Co.

KANSAS CITY, July 20.—We quote: New No. 1 white comb, 14@15c; No. 1 amber, 14c; dark, 13c. Extracted, old, 6@6½c; no new in market. Beeswax, 22@25c.

C. C. CLEMONS &amp; Co.

DETROIT, July 24.—Fancy white comb, 15@16c; No. 1, white, 14@15c; amber and dark, 10@12c. Extracted, white, 7c; amber and dark, 5@6c. Beeswax, 25@26c.

Supply and demand for honey both limited.

M. H. HUNT &amp; SON.

NEW YORK, July 21.—Our market is practically bare of comb honey, and there is a good demand for white at from 13@15c per pound, according to quality and style of package. The market on extracted is rather quiet, and inactive. New crop is slow in coming in, and prices have not yet been established. Beeswax holds firm at 27@28c. HILDRETH & SEGELKEN.

SAN FRANCISCO, July 3.—White comb, 12@12½c; amber, 8@10c. Extracted, white, 6½@7c; light amber, 5½@6¼c; amber, 5¼@5½c; Beeswax, 26@27c.

The market is fairly supplied with amber extracted, which is arriving mainly from the San Joaquin section, and is meeting with a moderate demand at current rates, both for shipment and local use. Water white honey is scarce, either comb or extracted. Choice comb is inquired for, and in a small way is salable over figures warranted as a regular quotation.

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We have a tremendous and growing trade in this line, and would like to hear from all who have such goods to sell in any part of the country, with quality, description, and lowest cash price. THOS. C. STANLEY & SON, Fairfield, Ill.

### WANTED COMB HONEY AND EXTRACTED HONEY.

Will buy your honey, no matter what quantity. Mail sample with your price expected delivered in Cincinnati. I pay cash on delivery. C. H. W. WEBER, 2146 Central Ave., CINCINNATI, OHIO.

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[THIS CUT IS THE FULL SIZE OF THE KNIFE.]

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The Novelty Knife is indeed a novelty. The novelty lies in the handle. It is made beautifully of indestructible celluloid, which is as transparent as glass. Underneath the celluloid, on one side of the handle is placed the name and residence of the subscriber, and on the other side pictures of a Queen, Drone, and Worker, as shown here.

The Material entering into this celebrated knife is of the very best quality; the blades are hand-forged out of the very finest English razor-steel, and we warrant every blade. The bolsters are made of German silver, and will never rust or corrode. The rivets are hardened German silver wire; the linings are plate brass; the back springs of Sheffield spring-steel, and the finish of the handle as described above. It will last a last-time, with proper usage.

Why Own the Novelty Knife? In case a good knife is lost, the chances are the owner will never recover it; but if the "Novelty" is lost, having name and address of owner, the finder will return it; otherwise to try to destroy the name and address, would destroy the knife. If traveling, and you meet with a serious accident, and are so fortunate as to have one of the "Novelties," your POCKET-KNIFE will serve as an identifier; and in case of death, your relatives will at once be notified of the accident.

How appropriate this knife is for a present! What more lasting memento could a mother give to a son, a wife to a husband, a sister to a brother, or a lady to a gentleman, the knife having the name of the recipient on one side?

The accompanying cut gives a faint idea, but cannot fully convey an exact representation of this beautiful knife, as the "Novelty" must be seen to be appreciated.

How to Get this Valuable Knife.—We send it postpaid for \$1.10, or give it as a Premium to the one sending us THREE NEW SUBSCRIBERS to the Bee Journal (with \$3.00). We will club the Novelty Knife and the Bee Journal for one year, both for \$1.90.

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